A NEW EOCENE *CASSIGERINELLA* FROM FLORIDA

by W. G. CORDEY

ABSTRACT. A new species of *Cassigerinella* (*C. eocaenica*) is proposed for specimens obtained from an Eocene sample taken off Blake Plateau, Florida. The species is similar, but quite distinct from the Oligocene marker *C. chipolensis* (Cushman and Ponton 1932). Therefore the stratigraphical value of the overlap in ranges of *C. chipolensis* with *Pseudohastigerina micra* (Cole 1927) as indicators of basal Oligocene is not affected.

THE joint occurrence of the species *Pseudohastigerina micra* (Cole 1927) and *Cassigerinella chipolensis* (Cushman and Ponton) has been regarded as a means of recognizing the basal Oligocene, at least within the tropical and semi-tropical belts. This overlap was first recognized by Blow and Banner (*in* Eames *et al.* 1962, p. 68) as a further criterion for the recognition of their zone of *Globigerina sellii* Borsetti 1959 (= *G. oligocaenica* Blow and Banner 1962). Saunders and Cordey (1965) also recognized this overlap in a study of the Oceanic Formation of Barbados. It occurred in samples immediately overlying deposits of definite Eocene age containing such forms as *Hantkenina* spp., *Globorotalia centralis*, and *G. cerro-azulensis*. Bolli (1966), in a general review of world-wide planktonic zonations, added further support to the stratigraphic value of this observed overlap.

Saito and Bé (1963) established an Oligocene age (*sensu* Eames *et al.*, op. cit.) for the Vicksburg group of the Gulf Coast region. However, they stated (p. 704) that *C. chipolensis* and *P. micra* occurred together with Eocene forms (e.g. *Hantkenina alabamensis*, *H. primitiva*, *Globorotalia cerro-azulensis*) from a core taken off the Florida coast (Lamont Core A167–21, 29° 49′ N., 79° 39′ W.). This record therefore cast considerable doubt on the stratigraphic value of this overlap as far as the recognition of the Eocene–Oligocene boundary or basal Oligocene was concerned. Blow examined these cassigerinellids and concluded (pers. comm.) that they were different from *C. chipolensis*. Through the kindness of Drs. Bé and Saito the writer obtained material which contained the same form of *Cassigerinella* with *Hantkenina* spp., but from a location to the north of the Lamont Core, at Blake Plateau, 30° 04·8′ N., 79° 14·5′ W., Sample J.6B.

A careful comparison of the cassigerinellids in the Blake Plateau material with *C. chipolensis* from both the *Globigerina ampliapertura* zone of Trinidad and the Oceanic Formation of Barbados indicates that the Eocene specimens differ from *C. chipolensis*. In view of the stratigraphic significance of *C. chipolensis*, it is desirable that a new species should be erected for these Eocene occurrences.

SYSTEMATIC DESCRIPTIONS

Genus CASSIGERINELLA Pokorný 1955

Cassigerinella eocaenica sp. nov.

Text-fig. 1*a–e*

Description. Test very small, calcareous, perforate; 8–9 chambers in the final whorl, showing a gradual and uniform increase in size, moderately inflated. Initial two (possibly

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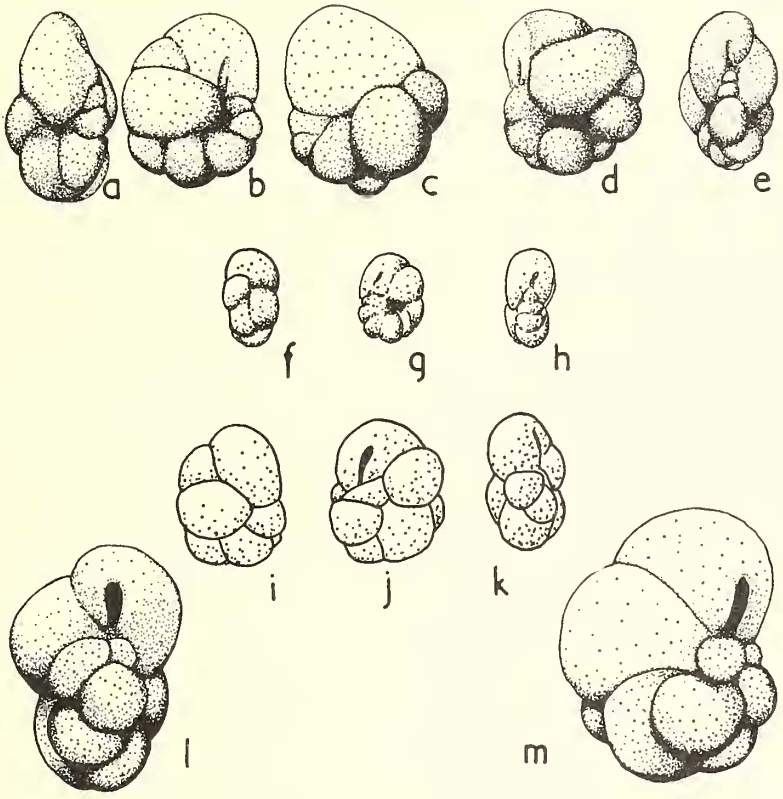
three) chambers planispirally arranged, later becoming biserial alternating, but coiled in the same plane. Periphery lobulate, initially sub-acute, becoming sub-rounded, sutures distinct, depressed, curved. Aperture a latero-marginal, extra-umbilical arch.



TEXT-FIG. 1.

a–e, *Cassigerinella eocaenica* sp. nov. Sample J-6b, 30° 04·8′ N., 79° 14·5′ W., 215′ from top. *a–c*, Holotype, BMNH P46838; *d*, *e*, Paratype, BMNH P46839; both ×300.

f–m, *Cassigerinella chipolensis* (Cushman and Ponton). *f–h*, Dissected hypotype showing penultimate whorl, early chambers planispirally coiled, later chambers alternating; *G. ampliapertura* Zone, Cipero Coast, Trinidad; BMNH P46840, ×213. *i–k*, After Cushman and Ponton, ×150. *l*, *m*, Hypotype, *G. ampliapertura* zone, Cipero Coast, Trinidad; BMNH P46841, ×275.

Remarks. *C. eocaenica* is similar to *C. chipolensis*, but differs in being consistently smaller, the greatest breadth of the final whorl varying from 0·1 to 0·12 mm., the average being 0·1 mm. Measurement of 45 specimens of *C. chipolensis* shows a variation in the breadth of the final whorl from 0·13 to 0·19 mm., the average being 0·16 mm. Secondly, the chambers in the final whorl are less inflated than in *C. chipolensis*. Specimens of *C. chipolensis* from Barbados (Oceanic Formation), from the Cipero Formation of Trinidad and from the Oligocene of Lindi (Blow and Banner *in* Eames *et al.* 1962, pl. 15, figs. M–N), show a more rapid increase in the size of the chambers of the final whorl

than in *C. eocaenica*. *C. chipolensis* also has a more rounded periphery throughout. Finally, the chamber arrangement in the final whorl of *C. eocaenica* varies from an initial planispiral arrangement to alternating, whereas the chamber arrangement in *C. chipolensis* is entirely alternating throughout the final whorl. The planispiral arrangement is only developed in the first two or three chambers of the penultimate whorl of *C. chipolensis* (text-fig. 1, *f–h*). The only other species which shows any morphological similarity to *C. eocaenica* is *C. globolocula* Ivanova 1958. Pokorný (*in* Eames *et al.*) agreed that his species *C. boudecensis* was probably conspecific with *chipolensis*, and considered that *globolocula* was 'certainly conspecific with *boudecensis*' (op. cit., p. 83). The writer would agree with this conclusion and therefore the above remarks on *C. chipolensis* and *C. eocaenica* apply equally to *C. globolocula* (and also *C. boudecensis*).

Deposition of types. Holotype and paratype specimens are deposited in the British Museum (Natural History). An unfigured paratype is deposited in the United States National Museum, No. 643514.

Material. Fifteen specimens of *C. eocaenica*; forty-five specimens of *C. chipolensis*.

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